

What is claimed is:

- Claim 1. An adjustable intraocular lens system for an  
5 individual's eye, said intraocular lens system comprising:  
a. a primary intraocular lens having an optic  
with an optical axis, a peripheral edge, an  
anterior surface and a posterior surface, said  
preliminary intraocular lens optic having a  
10 primary optical power, said primary  
intraocular lens having a narrow slit formed  
adjacent the peripheral edge of the primary  
intraocular lens optic, and having  
attachment means fixed to said primary  
15 intraocular lens optic for maintaining said  
primary intraocular lens optic optical axis  
centered along the optical axis of an  
individual's eye; and  
b. a secondary intraocular lens having an optic  
20 with an anterior surface and a posterior  
surface, said optic having a secondary optical  
power and having an attachment tab extending  
generally radially from the optic, said  
attachment tab being sized to penetrate the  
25 primary intraocular lens slit with the  
secondary intraocular lens optic posterior  
surface laying against the primary intraocular  
lens optic anterior surface, whereby said  
secondary intraocular lens optic power  
30 provides optical power correction to the  
primary intraocular lens optic power.

Claim 2. The adjustable intraocular lens system as  
claimed in Claim 1, wherein said primary intraocular lens  
35 slit is formed through said primary intraocular lens optic.

Claim 3. The adjustable intraocular lens system as claimed in Claim 1, wherein a plurality of slits are formed in regions of said primary intraocular lens adjacent said 5 primary intraocular optic peripheral edge.

Claim 4. The adjustable intraocular lens system as claimed in Claim 1, wherein said secondary intraocular lens optic has a plurality of attachment tabs extending radially 10 from said secondary intraocular lens optic in locations enabling penetration of a selected one of said tabs into said primary intraocular lens slit.

Claim 5. The adjustable intraocular lens system as 15 claimed in Claim 1, wherein said tab radially extending from said secondary intraocular lens optic is wedge-shaped, being tapered in thickness toward a free end of the tab, so as to facilitate insertion of said tab into said primary intraocular lens slit.

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Claim 6. The adjustable intraocular lens system as claimed in Claim 1, wherein said primary intraocular lens optic is formed having a tab extending generally radially from the optic edge, said slit being formed in said primary 25 intraocular lens optic tab.

Claim 7. The adjustable intraocular lens system as claimed in Claim 1, wherein said primary intraocular slit is formed in said attachment means adjacent said primary 30 intraocular lens optic peripheral edge.

Claim 8. The adjustable intraocular lens system as claimed in Claim 1, wherein said secondary intraocular lens optic has a central thickness between about 0.1 mm and 35 about 0.4 mm.

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Claim 9. An adjustable intraocular lens system for an individual's eye, said intraocular lens system comprising:

- a. a primary intraocular lens having an optic with an optical axis, a peripheral edge, an anterior surface and a posterior surface, said preliminary intraocular lens optic having a primary optical power, said primary intraocular lens having a plurality of narrow slits formed adjacent the peripheral edge of the optic, and having attachment means fixed to said primary intraocular lens optic for maintaining said primary intraocular lens optic optical axis centered along the optical axis of an individual's eye; and
- b. a secondary intraocular lens having an optic with an anterior surface and a posterior surface, said secondary intraocular lens optic having a secondary optical power and having a plurality of attachment tabs extending generally radially from said optic, said attachment tabs being sized and located to penetrate the primary intraocular lens slits with the secondary intraocular lens optic posterior surface laying against the primary intraocular lens optic anterior surface, whereby said secondary intraocular lens optic power provides optical power correction to the primary intraocular lens optic power.

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Claim 10. The adjustable intraocular lens system as claimed in Claim 9, wherein said primary intraocular lens slits are formed through said primary intraocular lens optic.

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Claim 11. The adjustable intraocular lens system as claimed in Claim 9, wherein said plurality of tabs radially extending from said secondary intraocular lens optic are wedge-shaped, each said tab being tapered in 5 thickness toward a free end of the tab, so as to facilitate insertion of said tab into a corresponding one of said primary intraocular lens slits.

Claim 12. The adjustable intraocular lens system 10 as claimed in Claim 9, wherein said primary intraocular lens optic is formed having a plurality of tabs extending generally radially from the optic edge, said slits being formed in said primary intraocular lens optic tabs.

15 Claim 13. The adjustable intraocular lens system as claimed in Claim 9, wherein said primary intraocular lens slits are angled inwardly from said primary intraocular lens optic anterior surface and radially outwardly from said optical edge.

20 Claim 14. The adjustable intraocular lens system as claimed in Claim 9, wherein the plurality of primary intraocular lens slits comprises two peripherally spaced-apart slits and wherein said plurality of secondary intraocular optic tabs includes at least two tabs located 25 such that said tabs can be individually inserted into said two primary intraocular lens slits, whereby orientation of the secondary intraocular lens relative to the primary intraocular lens can be selected to provide required power 30 adjustment.

Claim 15. The adjustable intraocular lens system as claimed in Claim 9, wherein the plurality of secondary intraocular lens tabs comprises two peripherally spaced-apart tabs and wherein said plurality of primary intraocular slits includes at least two slits located such 35

that said two secondary intraocular lens tabs can be individually inserted into said primary intraocular lens slits, whereby orientation of the secondary intraocular lens relative to the primary intraocular lens can be  
5 selected to provide required power adjustment.

Claim 16. The adjustable intraocular lens system as claimed in Claim 9, wherein each of said plurality of primary intraocular lens slits have a slit height of  
10 between about 0.1 mm and about 0.25 mm.

Claim 17. The adjustable intraocular lens system as claimed in Claim 9, wherein each of said plurality of secondary intraocular lens optic tabs has a small hole  
15 formed at a base thereof whereby an instrument can be inserted into said hole to assist the installation of a tab into a primary intraocular lens slit.

Claim 18. The adjustable intraocular lens system  
20 as claimed in Claim 9, wherein said secondary intraocular lens optic has a central thickness between about 0.1 mm and about 0.4 mm.

Claim 19. The adjustable intraocular lens system  
25 as claimed in Claim 9 wherein said primary intraocular lens comprises a dual optic intraocular lens.

Claim 20. The adjustable intraocular lens system as claimed in Claim 9 wherein a curvature of said secondary  
30 intraocular lens optic posterior surface matches a curvature of the primary intraocular lens optic anterior surface,

Claim 21. A secondary intraocular lens which  
35 comprises an optic with an anterior surface, a posterior surface and a peripheral edge, said optic having a

secondary optical power and having an attachment tab extending generally radially from the optic peripheral edge, said tab being wedge-shaped, tapering in thickness toward a free end thereof, said optic having a central  
5 thickness between about 0.1m and about 0.4 mm.

Claim 22. The secondary intraocular lens as claimed in Claim 21 wherein said secondary intraocular lens optic is formed having a plurality of attachment tabs  
10 extending generally radially from the optic peripheral edge.

Claim 23. The secondary intraocular lens as claimed in Claim 21 wherein said secondary optic is formed  
15 from an elastically-deformable, biocompatible material.

Claim 24. The secondary intraocular lens as claimed in Claim 23 wherein said biocompatible material is selected from the group consisting of silicone and acrylic  
20 materials.

Claim 25. The secondary intraocular lens as claimed in Claim 21 wherein said attachment tab has a small positioning hole formed in a base region thereof.  
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Claim 26. The secondary intraocular lens as claimed in Claim 21 wherein said secondary optical power includes a spherical dioptric power between about -3 and about +3, a cylinder dioptric power between about -5 and  
30 about +5 and an add dioptric power between about 0.0 and about +4.

Claim 27. A primary intraocular lens which comprises:  
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- a. an optic with an optical axis, a peripheral edge, an anterior surface and a posterior

surface, said preliminary intraocular lens optic having a primary optical power, said primary intraocular lens having a slit formed adjacent the peripheral edge of said primary intraocular lens optic; and

- 5           b. attachment means fixed to said primary intraocular lens optic for maintaining said primary intraocular lens optic optical axis centered along the optical axis of an  
10           individual's eye.

Claim 28. The primary intraocular lens as claimed in Claim 27 wherein a plurality of slits are formed adjacent the peripheral edge of said primary intraocular  
15           lens optic.

Claim 29. The primary intraocular lens as claimed in Claim 27 wherein said slit is formed in said primary intraocular lens optic.

20           Claim 30. The primary intraocular lens as claimed in Claim 27 wherein said slit is formed in said attachment means adjacent the preliminary intraocular lens optic peripheral edge.

25           Claim 31. The primary intraocular lens as claimed in Claim 27 wherein said preliminary intraocular lens optic is formed having a tab radially extending from said peripheral edge thereof, said slit being formed in said  
30           tab.

Claim 32. The primary intraocular lens as claimed in Claim 27 wherein said slit is formed at an angle, being slanted inwardly from said primary intraocular lens optic  
35           anterior surface and radially outwardly.

Claim 33. The primary intraocular lens as claimed in Claim 27 wherein said primary optical power includes a spherical dioptric power between about -10 and about +35, a cylinder dioptric power between about -10 and about +10 and 5 an add dioptric power between about 0.0 and about +4, and an accommodating range dioptric power between about 0.0 and about +4.

Claim 34. The primary intraocular lens as claimed 10 in Claim 27 wherein said primary intraocular lens comprises a dual optic intraocular lens.

Claim 35. The primary intraocular lens as claimed in Claim 27 wherein said slit has a slit height of between 15 about 0.1 mm and about 0.25 mm and has an arc length between about 5 degrees and about 80 degrees.

Claim 36. A method for modifying the optical characteristics of a primary intraocular lens previously 20 implanted in a patient's eye, the primary intraocular lens having a primary optic with a narrow slit formed adjacent a periphery of said primary optic, and having a primary optical power, said method comprising the steps of:

- a. forming a thin, elastically deformable secondary optic having a diameter substantially equal to a primary optic diameter at said primary optic slit, and having a secondary optical power and an insertion tab extending radially outward from a secondary optic peripheral edge;
- 25 b. making a small, ocular incision in a patient's eye;
- c. inserting said secondary optic into said patient's eye through said ocular incision with

the secondary optic posterior surface laying on a primary optic anterior surface so as to combine the secondary optical power with the primary optical power;

- 5       d. positioning the secondary optic until said secondary optic tab is adjacent a entrance of said primary intraocular lens slit; and
- e. inserting said secondary optic tab into said primary intraocular lens slit.

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Claim 37. The method as claimed in Claim 36, wherein said previously implanted primary intraocular lens is formed having a plurality of said slits arranged in a first pattern around the peripheral edge of the primary optic and 15 in proximity thereto, and wherein the step of forming said secondary optic includes forming the secondary optic to have a plurality of said insertion tabs extending radially outward from the secondary optic peripheral edge in a second pattern that is compatible with said primary intraocular lens first 20 pattern of slits.

Claim 38. The method as claimed in Claim 37, wherein the step of positioning the secondary optic includes positioning the secondary optic in a desired 25 orientation relative to said primary optic so as to provide an optimum optical power combination of the primary and secondary optics, and wherein the step of positioning the secondary optic until said secondary optic tab is adjacent a entrance of said primary optic slit includes positioning the secondary optic until at least two of the secondary 30 optic tabs are adjacent corresponding primary intraocular

lens slits and then inserting said at least two secondary optic tabs into said corresponding primary intraocular lens slits.

5           Claim 39. The method as claimed in Claim 36, wherein the step of forming a secondary optic includes forming said radially extending insertion tab to have a wedge shape, tapering in thickness toward a free tab end.

10          Claim 40. The method as claimed in Claim 36, wherein said previously implanted primary intraocular lens is formed as a dual optic intraocular lens.

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15          Claim 41. A method for modifying the optical characteristics of an adjustable intraocular lens system which was previously implanted in an individual's eye and comprises a primary intraocular lens to which is detachably attached a secondary intraocular lens so as to provide combined primary and secondary optical powers, the primary  
20 intraocular lens having a primary optic with a narrow slit formed adjacent a periphery of said primary optic and the secondary intraocular lens having an insertion tab extending radially outward from a secondary optic peripheral edge and penetrating said primary intraocular lens slit, said method  
25 comprising the steps of:

- a. making a small, ocular incision in the individual's eye;
- b. withdrawing said secondary intraocular lens insertion tab from said primary intraocular lens slit, thereby detaching said secondary intraocular lens from said primary intraocular lens; and

c. explanting said detached secondary intraocular lens from the patient's eye through said ocular incision while leaving said primary intraocular lens implanted in the patient's eye.

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Claim 42. The method for modifying the optical characteristics of an adjustable intraocular lens system as claimed in Claim 41, including the steps of implanting, through said ocular incision, another secondary intraocular 10 lens in the patient's eye in place of the explanted secondary intraocular lens, and attaching the other secondary intraocular lens to the primary intraocular lens.